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Energy solutions
for a changing world

IRP in California post SB 350

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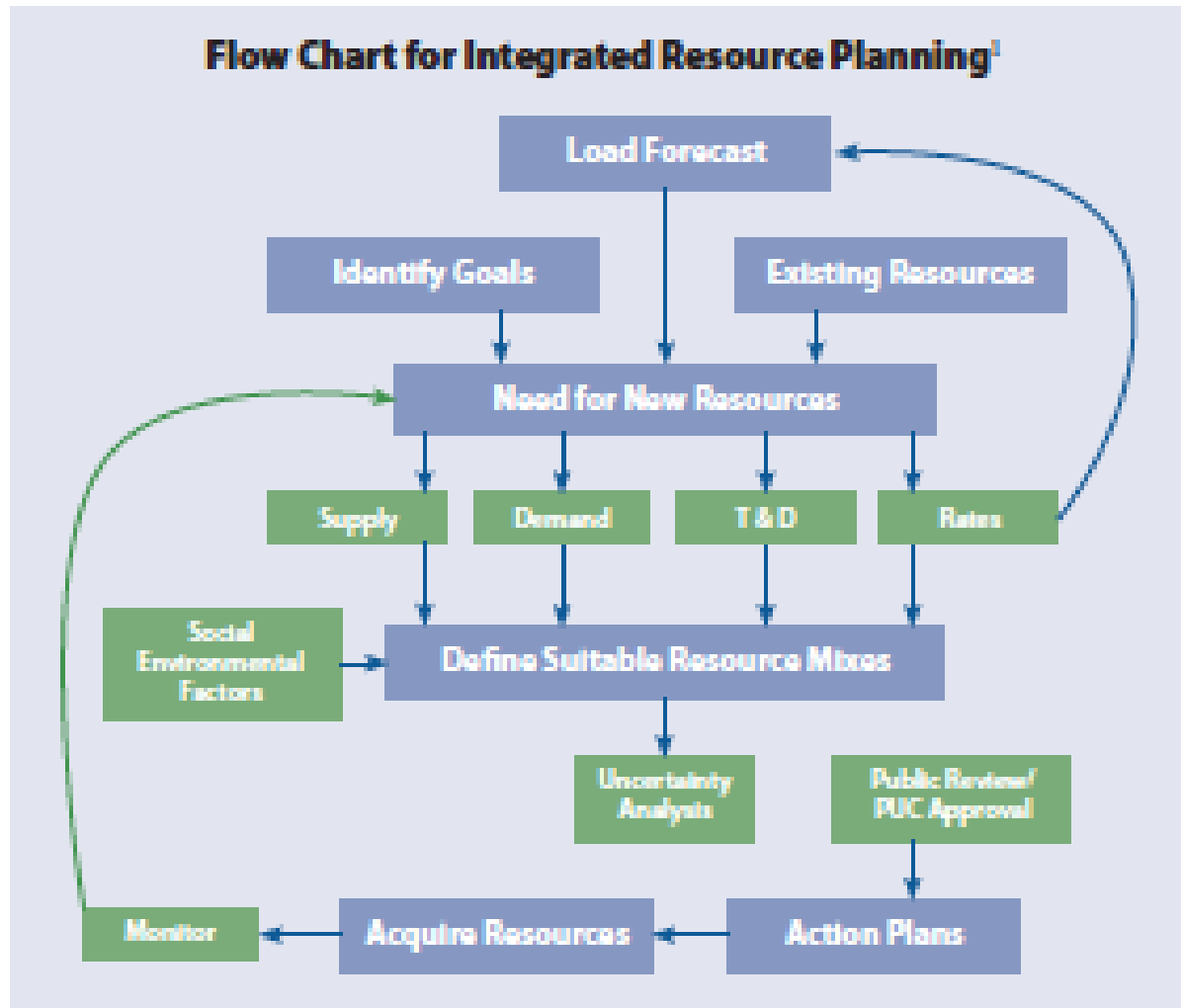
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The Regulatory Assistance Project (RAP)®

Agenda

- IRP in CA post SB 350
 - What does IRP look like in other places?
 - What are the differences between post 350 CA and other places?
- Addressing the Differences
 - Some questions
 - Some examples
- Recap

What IRP looks like in other places



IRPs have been Evolving

- Oregon evolving “Least Cost Planning” to explicitly include:
 - Integration of demand and supply options
 - Consideration of external costs
 - Allow the public to participate in planning at the earliest stages

IRPs have been Evolving

- Arizona focus on enabling competitive suppliers
 - Workshops to focus on developing needed infrastructure and a flexible, timely and fair competitive procurement process

IRPs have been Evolving

- Colorado proactive on Clean Air Act requirements
 - A coordinated plan of emission reductions from coal-fired power plants will enable Colorado rate-regulated utilities to meet the requirements of the Clean Air Act

CA Plan Goals and Elements Differ

- Multi-sectoral Carbon Compliance Focus
- Load and Load Modification
- DERs and The Demand Side
- CCAs and ESPs

More Differences

- Policy Preferences
- Environmental Preferences
- The Regional Market

Questions to Ask for each Difference

- How is this different from other places?
- How is this different from CA pre SB 350?
- What does it imply for existing processes: leverage, evolve, or replace?

More Questions

- What cross agency collaboration is required?
- What incremental data (if any) are required?
- What new modeling (if any) is required?
- What stakeholder vetting will be required and what agency should host?

Example: Selective Answers for Cross-sector Carbon Compliance

- How is this different from other places?
 - Explicit consideration of DERs, Buildings, Transportation, Electrification
- How is this different from CA pre SB 350?
 - Binding carbon target compliance, other?
- Existing processes, leverage, evolve or replace?

Example: Selective Answers for DERs and the Demand Side

- How is this different from other places?
 - Goal to extend planning to "animate DERs," and explicit consideration of demand side integration tools
 - Reflect CCA and ESP self-integration option
- How is this different from CA pre SB 350?
 - Evolution from pre 350 world
- Existing Processes: leverage, evolve or replace?

Environmental Preferences

- How is this different from other places?
- How is this different from CA pre SB 350?
- What cross agency collaboration is required?
- What data are required?
- What modeling is required?
- What stakeholder vetting will be required?

Environmental Preferences

- Section 454.52(a)(1)(H) says that the Commission's process for IRPs shall ensure that LSEs “**minimize localized air pollutants... with early priority on disadvantages communities.**”

How Might an SB 350 IRP Differ from a Typical IRP

- At a minimum, assess and report the impact of different potential resource portfolios on GHG *and non-GHG* emissions (e.g., NO_x, SO₂, etc.)
- Ideally, consider non-GHG emissions when selecting resource portfolios
- Collaborate with air pollution regulators
- Engage air pollution stakeholders/experts

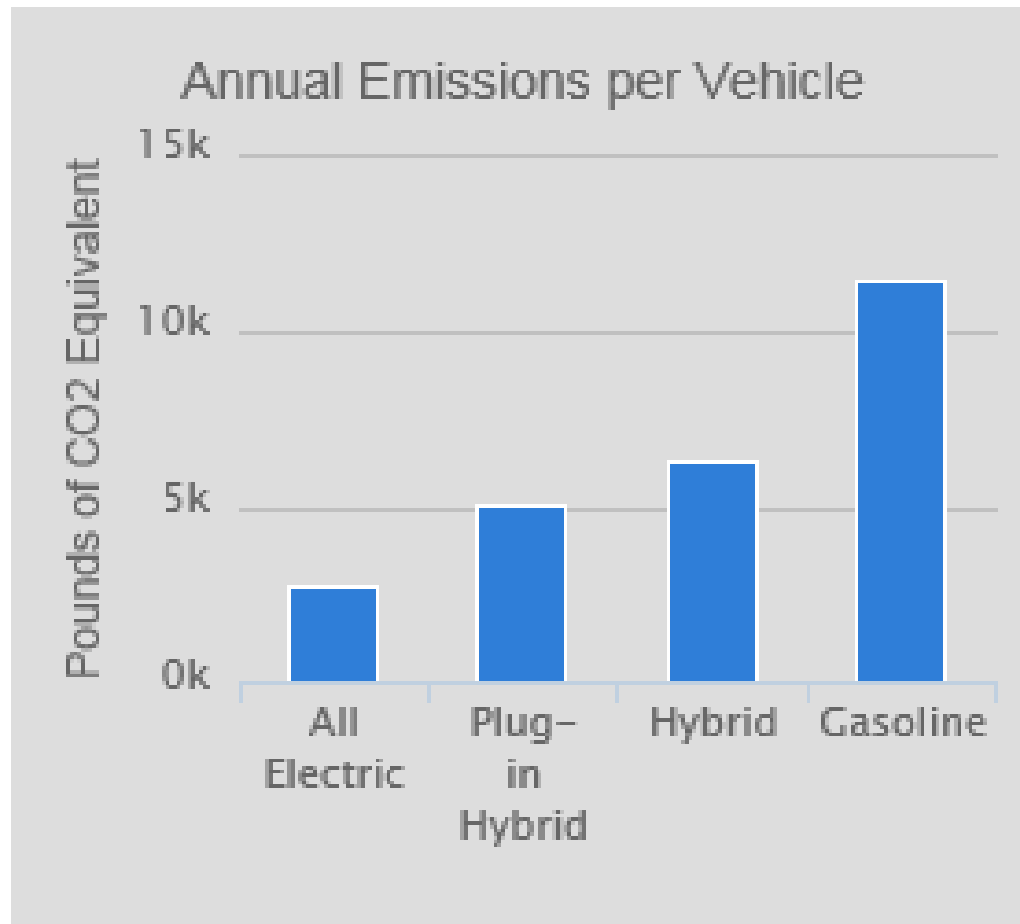
Atypical Data/Modeling Needs for an SB 350 IRP

- Data:
 - Air quality goals/needs
 - Emissions rates of resource options
- Modeling Tools:
 - Most modern electric sector modeling tools are capable of assessing emissions of multiple pollutants, if they have the proper input data
 - But what about cross-sectoral impacts, e.g. impacts of different levels of EV deployment?

Typical Emission Rates for New Generating Resources (lbs/Mwh_{net})

	GHG	NO _x	SO ₂
Wind/Solar/ Nuclear/Hydro	0	0	0
Biomass	0?	1.00	0.50
Coal w/CCS	200	0.47	0.022
Gas CC	820	0.09	0.0041
Coal	1800	0.62	0.42
Biomass	3000?	1.00	0.50

Typical Emissions for a CA Vehicle (based on current electricity sources)



**Source: US DOE
Alternative Fuels
Data Center**

Recap

- IRP in California can learn from other IRPs but it is really different
- IRP in California does include changes from pre-SB 350 planning
- Cross agency collaboration is key
- Process evolution is key
- Stakeholder collaboration is key



About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts that focuses on the long-term economic and environmental sustainability of the power sector. RAP has deep expertise in regulatory and market policies that:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
- Allocate system benefits fairly among all consumers

Learn more about RAP at www.raponline.org

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